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UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

FOREST INSECT INVESTIGATIONS

REPORT OF
GENERAL SERVICE WORK AND EXTENSION
FOR CALENDAR YEAR 1937

Compiled by
R. L. Furniss
Assistant Entomologist

	JMM	✓
	KAS	KAS
	JEP	JEP
	GRS	GRS
	PCI	PCI
	JSY	✓
	ASW	ASW
	EBB	EBB

Forest Insect Laboratory
445 U. S. Court House
Portland, Oregon
Jan. 20, 1938

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REPORT OF GENERAL SERVICE WORK AND EXTENSION
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The service project is a general one wherein insects are identified and information is disseminated to the public. No time is set up for the project and no plans can be made for it since the work is dependent upon the nature of the calls. That it does take considerable time, however, is evidenced by the number of requests received and answered. Considerable returns are received for this service work in the form of information that very likely would not come to our attention in any other way. During the past year we were rewarded by several unusual records. Considerable information was accumulated concerning the occurrence of insect-caused damage to forest products. Records of ant and termite damage to dwellings in the Pacific Northwest were particularly numerous. Relatively little information was received concerning the major forest insect problems.

In 1937, for the second year, a card index has been kept listing all requests of a general nature that reached the Portland Forest Insect Laboratory during the calendar year. The present report is a summary of these requests.

From January 1 to December 31, 1937, a total of 172 requests for information was received. These requests involved a great many subjects, of which 70 per cent were related to forest entomology. Of the 30 per cent dealing with unrelated subjects some were referred to the Division of Insects Affecting Man and

Animals, some to the county agent, some to the State Agricultural College, and some to the Office of Forest Pathology.

An independent record has been kept of requests for publications dealing with forest insect problems. These requests have continued to come in at an increased rate. Whenever possible, requests for control measures were met by supplying printed matter dealing with the particular insect involved. Farmers' Bulletins and the Bureau of Entomology and Plant Quarantine E-series have been most useful for general distribution. Well over 100 copies of these publications were distributed during the year. The E-series control outlines have been found particularly useful, and it is hoped that in the near future more forest insects can be included in this series.

Judged by the number of individual requests for publications on subjects other than control, the Keen Tree Ring Study has been most popular. In number of copies distributed, the Keen Ponderosa Pine Tree Classification leads the list. This classification has been widely discussed and is now being used extensively, either in its original or a slightly modified form, by several agencies, particularly the Forest Service, in Regions 1, 2, 4, 5, and 6. Numerous requests for the forest insect handbook could not be fulfilled. Several timber owners and agencies interested in the Tillamook Burn requested and received information concerning the progress of insect-caused deterioration of fire-killed Douglas fir in that area.

In the following discussion, requests for information are considered by groups according to the nature of the request. The first four of these groups contain the noteworthy records relating to forest entomology. In Appendix A the occurrence of requests is given by months. It is apparent from this list that by far the largest number of calls are received during the summer months when the station personnel is in the field.

INSECTS AFFECTING FOREST TREES

Seventeen requests were made concerning this group of insects. None was of outstanding interest.

Dendroctonus brevicornis Lec. During August three owners of small tracts of timber in eastern Oregon requested information concerning the amount of pine beetle-caused losses on their holdings. This was supplied from data obtained by the regional pine beetle survey.

Dendroctonus pseudotsugae Hopk. Work of this insect was reported upon four occasions. Twice reports of dead timber in the vicinity of the Tillamook Burn were received. In each case the trees had been dead since 1935, when an outbreak occurred. This insect was also recorded in green trees along a highway right-of-way near Nisqually, Washington, and in logs freshly cut for a rustic home. There was no notable outbreak of this beetle west of the Cascade Range in 1937.

Gnathotrichus retusus (Lec.) and G. sulcatus (Lec.) These two ambrosia beetles working together in one instance, and G. retusus working alone in two cases were reported as killing second-growth Douglas fir. In the only case examined, the ambrosia beetles were attacking trees that had been killed by the Douglas fir beetle. In this connection, it is a rather common occurrence to receive reports of dying trees one or more years after the damage has been done. Usually secondary insects, such as the ambrosia beetles, are sent in as the agents of destruction.

Halisidota argentata Pack. On April 29 H. argentata was noted as being rather abundant on Pinus contorta near Marshfield, Oregon. Later, on May 18, caterpillars of this insect were reported feeding upon Picea sitchensis near Nehalem, Oregon. Rearings from larval material both in 1936 and 1937 produced very few parasites and, in view of a decided increase in population since 1936, an outbreak of this defoliator seems pending.

Drought Killing. Unusually prolonged dry weather in the fall of 1936 when precipitation for September, October, and November was only 5 per cent of normal, and this following the usual dry months of July and August, resulted in the death of many small Douglas fir, incense cedar, and other forest trees in the Rogue River drainage near Medford and Grants Pass, Oregon. Douglas fir was most seriously affected. Observations were made in this area during May and June when it was noted that Monochamus obtusus Gay., Cylindrocopturus longulus (Lec.), Scolytus unispinosus Lec.,

Pseudohylesinus sp., and Carphoborus sp. were supplementing the drought injury to Douglas fir. A separate memorandum is to be prepared to record the occurrence of this drought killing.

INSECTS ATTACKING FOREST PRODUCTS

Information received from 62 requests concerning insects in this group was of considerable help in our study of products problems by indicating the relative importance of the various species. Several records of unusual interest were also obtained.

Termites. Of 13 requests concerning termites, 3 were requests for information, 9 concerned Zootermopsis angusticollis Hagen, and 1 dealt with Reticulitermes hesperus Banks.

Zootermopsis angusticollis Hagen. In eight cases this insect was noted in the foundations of homes and without exception associated with rot. In most cases rot was the more destructive agent and called for changes in construction which would also act as satisfactory termite prevention measures. One instance was noted of this termite destroying rootlets in a local nursery where ornamental shrubs were grown.

Reticulitermes hesperus Banks. On September 3 a small colony of R. hesperus was found in a floor of a Portland home, thus marking the first case of damage by this termite that has been reported to the Portland Forest Insect Laboratory. Soil poisoning with orthodichlorobenzene or kerosene and creosote was suggested as a control measure, the only alternative being very

extensive remodeling of the home. An interesting sidelight is the fact that a local exterminator identified the insect as a termite and then quoted a flat price of \$125 for guaranteed control. His proposed method of treatment remains unknown.

Ants. Ants, especially carpenter ants, are more of a problem in the Pacific Northwest than are termites. Their presence is troublesome in two ways. By constructing their galleries in wood they are actually destructive to dwellings, although it seems to be true that they seek openings between walls and floors rather than mine extensively in sound wood. During spring and fall the winged forms emerge in great numbers in human living quarters and make their presence generally disagreeable. Three forms, as yet undetermined, are most troublesome.

In the past twelve months 24 inquiries came in regarding ants. Most remarkable was the case on Cedar Butte Lookout, in Tillamook County, in which the mountain top was rendered uninhabitable for nearly two weeks by flying ants, the dead bodies of which accumulated to a depth of eighteen inches in places.

Arrangements have been made with several home owners to conduct experimental control of ants in infested houses by using the more promising methods, as indicated by experiments conducted at Pack Forest, La Grande, Washington, in the fall of 1937.

Lyctus sp. Four cases involving powder-post beetles were reported--two in furniture, and two in flooring. Orthodichlorobenzene, turpentine, or paradichlorobenzene in kerosene applied with a paint brush were recommended for control measures. Reports have not been received concerning the effectiveness of these treatments.

Madobregmus gibbicollis (Lec.). On July 30 Mr. Wm. W. Baker of the Berry Insect Laboratory in Puyallup, Washington, reported M. gibbicollis as heavily infesting a house in that city. On October 15 an intensive examination of the house showed that the entire under portion was infested. Dry, unrotted wood was attacked and wide-grained wood was preferred to narrow-grained wood. The extensive damage to this house indicates that M. gibbicollis may become a pest of considerable importance in the Northwest. Control problems are much the same as when dealing with Lyctus. Figure 1 shows damage to a sill caused by M. gibbicollis.

Opsinus quadrilineatus Mann. On March 11 an unusual record was obtained of extensive damage caused by this insect to a rustic home in the Mount Hood recreational area. Specimens of the thoroughly-riddled Douglas fir wood (see Fig. 2) were brought to the laboratory where adults of O. quadrilineatus were reared. The home owner stated that infestation extended throughout the house, which was built seven or eight years ago. O. quadrilineatus normally breeds in suppressed branches of Picea, Pseudotsuga, Tsuga, and Abies, and has not been recorded previously as a pest of wood products.

Buprestis aurulenta L. and B. langi Mann. Year after year requests come in concerning the emergence holes of these two flat-headed borers. Of the two beetles, B. aurulenta is more commonly found in homes. Douglas fir flooring and siding are most frequently attacked. Numerous cases indicate that these beetles are able to exist for many years in seasoned wood products.

In 1937 six calls were received concerning Buprestis. None required control measures. Most interesting was a record of B. langi emerging in numbers early in July from a large timber that had been in use for many years on the Municipal Docks at Vancouver, Washington.

Polysaon stouti (Lec.). Four examples of damage to furniture caused by this insect came to our attention. This beetle frequently reaches the Northwest in hardwood furniture originating in California. In one instance reported from Hoquiam, Washington, on February 27, an adult bored through the top of a hardwood table that had been in use for ten years. In the other three cases P. stouti had apparently been present in the furniture from one to five years.

Callidium antennatum Newm. On May 17 this insect was reported infesting the walls of a rustic cabin in Lakeview, Oregon.

Prionus californicus Mots. Larvae of this beetle were found in February mining in decaying Douglas fir bridge timbers in the City of Portland.

Borers in Firewood. Each year during the winter and spring months there are several inquiries concerning wood borers which emerge in homes from firewood stored in basements. During 1937 Trypodendron cavifrons (Mamm.), Pseudopityophthorus pubipennis (Lec.), and Neoclytus conjunctus (Lec.) were thus reported.

INSECTS AFFECTING SHADE TREES

Thirty calls were received concerning insects in this group. Only a few were of particular interest.

Galerucella xanthomelana (Schr.). As a result of insufficient Park Bureau funds for spraying ornamental elms, an outbreak of this beetle occurred in Portland during 1936. This infestation was materially reduced in 1937 by an intensive spraying program. Five inquiries concerning the elm leaf beetle were received, three of them during early spring when hibernating adults become active.

Galerucella tuberculata (Say). Extensive defoliation of native willows by this insect was reported from the Olympic Peninsula during August. Skeletonization of the leaves by G. tuberculata causes them to turn brown and fall prematurely. No economic significance is attached to this defoliation.

Cryptorhynchus lapathi (L.). This European insect has become thoroughly established on the native willows in the vicinity of Portland and also at many other places in Oregon and Washington.

During the past summer four calls were received concerning this insect in ornamental willows and poplars. The year 1937 was the first in which home owners have reported it, thus indicating its increasing abundance as an ornamental pest. C. lapathi first came to our attention in July 1933 when J. A. Beal found it heavily infesting willows along the Willamette River near Portland. It is apparently moving southward from British Columbia and Washington where it has been known to be present for many years.

Phloeosinus swainsei Bruck. On July 18 a Port Orford cedar hedge was found to be infested with this insect.

Adelges piceae Ratz. Mature grand firs on a country estate near Salem, Oregon, were noted to be heavily infested with this insect. The infestation is known to have existed since 1932 when these trees were first examined by F. P. Keen and H. G. Lachmund. The trees were also attacked by the false mistletoe, Razoumofakya occidentalis abietina, and the ambrosia beetle, Platypus wilsoni Sw. A. piceae causes deformation of the leaf buds and a thinning of the foliage, particularly on the lower branches (see Fig. 3). For additional information refer to Keen's memorandum on the examination of white firs at the Mollery farm, September 1937.

Adelges tsugae Ann. Late in April this insect was found to be killing the shaded lower branches of a western hemlock hedge in the City of Portland (see Fig. 4).

Stilpnotia salicis (Linn.). During the summer three requests came in concerning this insect. In the State of Washington satin moth infestation was light this year. A few scattered points of heavy infestation existed in Oregon. Hearings from collections made in Tacoma, Olympia, and Longview, Washington, yielded a heavy degree of parasitism.

The parasite, Apanteles solitarius Ratz. has become established in central western Oregon. Extensive scouting in the Rogue River drainage failed to uncover any satin moth in that area.

INSECTS TAKEN IN FLIGHT OR ON GROUND

Twelve calls were received in this group.

Ergates spiculatus Lec. In the Douglas fir region this beetle flies in late summer and fall, during which period in 1937 four people brought in adults for identification. Its most important economic role is in the deterioration of fire-killed Douglas fir. The records brought to our attention were the result of casual interest in the large adults rather than any observed damage.

Megariyssa ortonii (Cress.) and Rogalia funebris Mots. During July this large parasite and showy hardwood borer, respectively, were brought in for identification. It is a lean year indeed when one or both of these insects do not come to our attention.

Brachyrrhinus ovatus (Linn.). Migrating adults of the strawberry root weevil were found in numbers in the Forest Service Radio Laboratory on July 20. This is a very common insect in Portland, being present in numbers in nearly every back yard or other grassy spot. In 1929 B. ovatus was discovered to be a pest of Picea sitchensis grown in a forest nursery.

Malacosoma disstria Hbn. Adults of this moth were very abundant for several nights about street lights in downtown Portland. This flight was marked enough to receive comment in the "Morning Oregonian" of July 15. In that paper the insects were erroneously reported as the Gypsy moth.

GARDEN AND ORCHARD PESTS

Twelve calls were received and most of them were turned over to the county agent or to the State Agricultural College.

Trachyploeus bifoveolatus. On October 30 adults of this weevil were found at a residence in Portland. In so far as is known, this is the first collection of this European insect west of the Mississippi River.

HOUSEHOLD PESTS

Fifteen calls were received. In this classification and those following the requests were answered by supplying literature on the subject sought or the person was referred to the proper authority.

INSECTS AFFECTING MAN

Three calls.

PLANT AND FOREST PATHOLOGY

Thirteen calls.

UNCLASSIFIED

Eight calls.

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APPENDIX A

Occurrence of Requests by Months

January	5
February	3
March	6
April	7
May	23
June	9
July	36
August	28
September	21
October	18
November	13
December	2
Unaccounted	<u>1</u>
Total requests	172

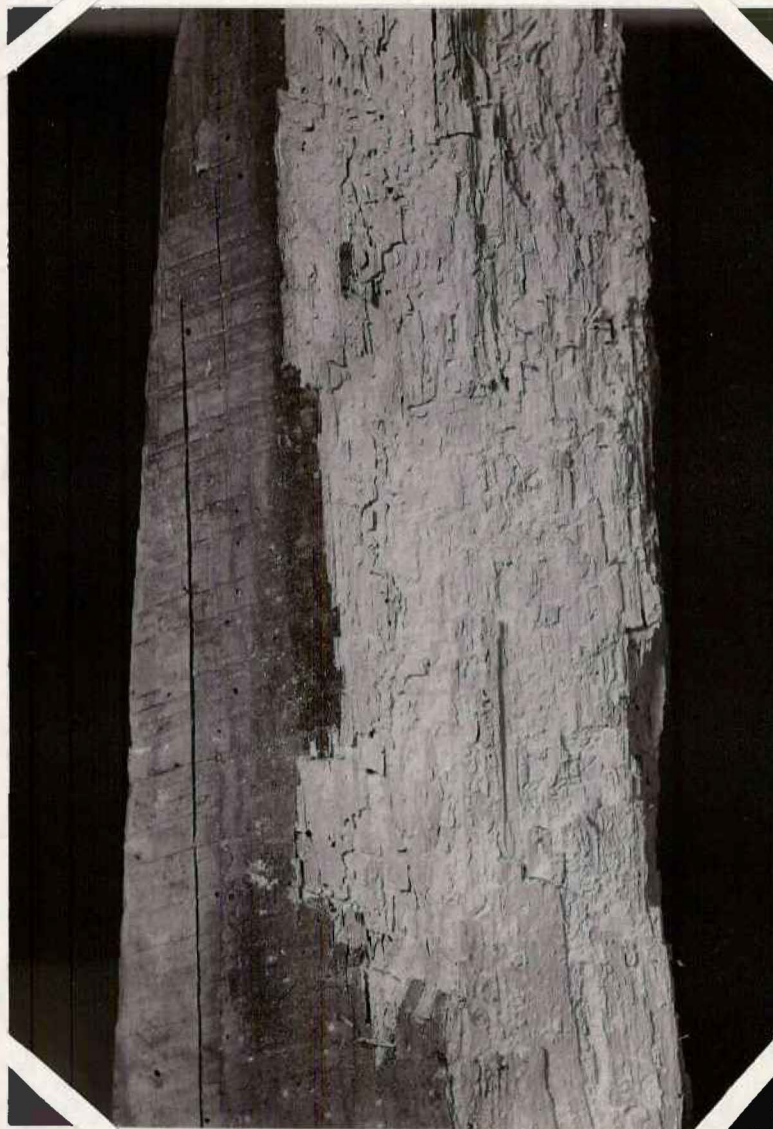


Fig. 1 - Damage to a sill caused by
Hadobregmus gibbicollis (Lec.) ($x_{\frac{1}{2}}$).

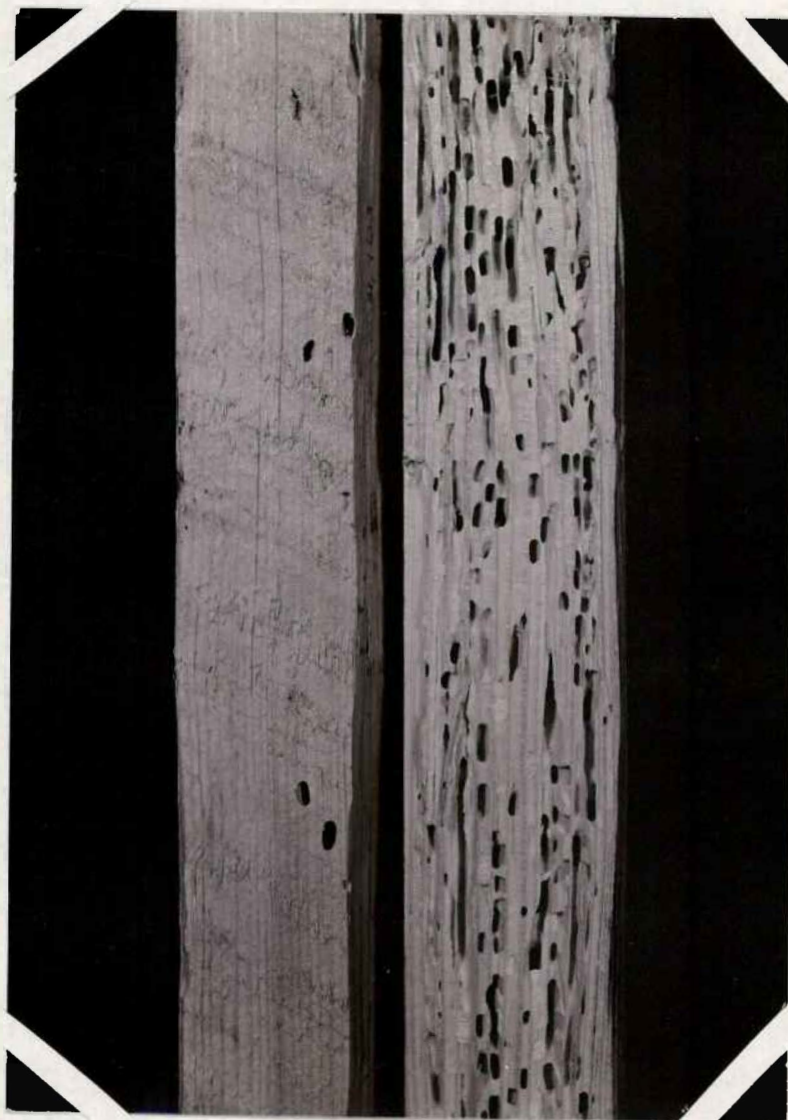


Fig. 2 - Larval mines of *Opimus quadrilineatus*
Mann. in a portion of Douglas fir
window sill (x 2/3).



Fig. 3 - Bud injury to grand fir caused by
Adelges piceae Ratz. (x 1).

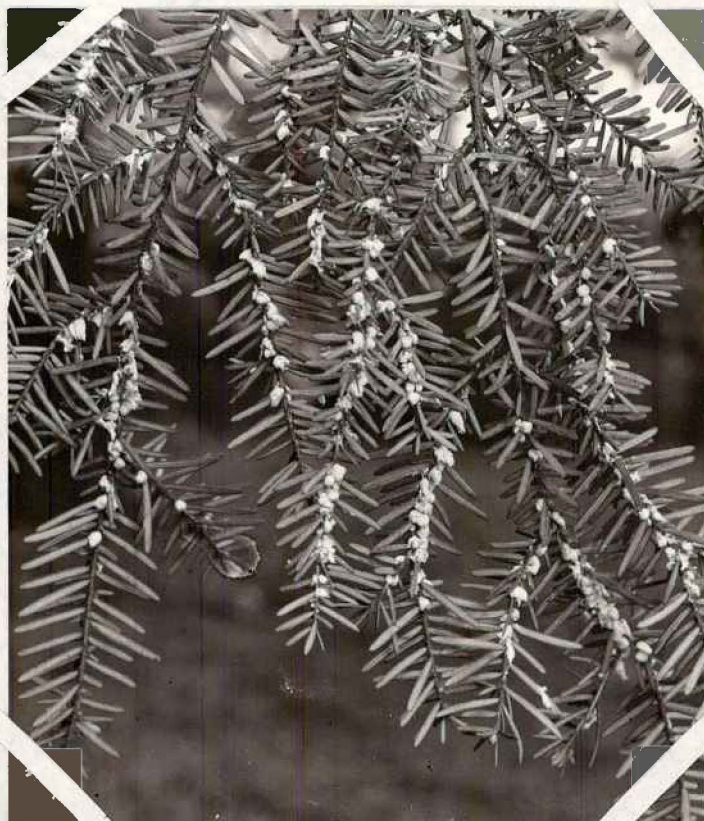


Fig. 4 - Adelges tsugae Ann. on foliage
of western hemlock ($\times \frac{1}{2}$).